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MKANGO ANNOUNCES RESULTS OF DEFINITIVE FEASIBILITY STUDY FOR THE SONGWE HILL RARE EARTHS PROJECT IN MALAWI - NPV OF US$559.0 MILLION AND IRR OF 31.5%

London, U.K. and Vancouver, CANADA – 5 July, 2022 – Mkango Resources Ltd. (AIM/TSX-V: MKA) (the "**Company**" or "**Mkango**") is pleased to announce the results of the definitive feasibility study ("**DFS**") for the Songwe Hill Rare Earths Project ("Songwe" or the "Project") in Malawi.

Highlights

- **US$559.0 million post-tax net present value ("NPV"), using a 10% nominal discount rate, with an internal rate of return ("IRR") of 31.5%, payback period of 2.5 years from full production (5 years from start of capital expenditure) and post-tax life-of-operations nominal cash flow of $2.1 billion.**
- **DFS is for 100% of Songwe on a stand-alone basis. Under the Mines and Minerals Act of Malawi, the Government of Malawi is entitled to a 10% free carried interest in Songwe.**
- **Songwe is now confirmed as one of the very few rare earths projects globally to have reached the DFS stage, with a full Environmental, Social, Health Impact Assessment ("ESHIA") completed in compliance with IFC Performance Standards and The Global Industry Standard for Tailings Management (2020) ("GISTM") adopted for design and management of the tailings storage facility.**
- **Long operating life of 18 years, with mining assumed to commence in February 2025, production ramping up from July 2025 and averaging 5,954 tonnes per year total rare earth oxides ("TREO") for the first five years of full production (September 2025 – August 2030), including 1,953 tonnes per year of neodymium and praseodymium oxides, and 56 tonnes per year of dysprosium and terbium oxides, in a mixed rare earth carbonate ("MREC") grading 55% TREO, generating nominal EBITDA of US$215 million per year.**
- **Neodymium, praseodymium, dysprosium and terbium are critical for the green transition, used in permanent magnets for electric vehicles, wind turbines and many electronic devices.**
- **Initial capital expenditure ("capex") of US$277 million (excluding a US$34 million contingency) for development of mine, mill, flotation and hydrometallurgy plants, tailings storage facility, and related project infrastructure in Malawi.**
- **The NPV excludes any value attributable to the proposed Pulawy Rare Earth Separation Project ("Pulawy") in Poland, which is expected to process MREC from Songwe, enabling Mkango to capture additional value via growing its integrated downstream business with a captive source of primary raw material feed from Songwe. The NPV also excludes any value attributable to Mkango's interests in rare earth magnet recycling.**

- **The results of the DFS for an integrated project, comprising both Songwe and Pulawy, are expected to be announced when both the Mine Development Agreement ("MDA") with the Malawi Government is completed for Songwe and the feasibility study is completed for Pulawy.**
- **In parallel, a major focus for the Company will be further optimisation of the Project with the objective of lowering capex and operating costs ("opex"), both of which have been negatively impacted by current market dislocations, creating the potential to reduce costs as markets stabilise.**

The Company will host an investor conference call at 3pm UK time / 10am Eastern Time on Friday 8th July 2022. Please join the call at least 5 minutes before the booked start time to allow the operator to transfer you into the call by the scheduled start time: Canada toll free: 1 866 378 3566; UK toll free: 0808 109 0700; USA toll free: 1 866 966 5335; Password: Mkango DFS Results.

The DFS indicates a US$559.0 million post-tax NPV, using a 10% nominal discount rate, and 31.5% post-tax IRR for 100% of Songwe. The DFS is based on Songwe as a stand-alone project selling MREC as opposed to separated rare earth oxides and excludes Pulawy, which has potential to add significant downstream value. The financial analysis doesn't reflect any changes to the fiscal regime that may be contained in the MDA that is currently being negotiated with the Government of Malawi. The Company plans to announce the results of the feasibility study for an integrated project comprising both Songwe and Pulawy (the "Integrated DFS") when both the MDA is completed for Songwe and the feasibility study is completed for Pulawy.

With the release of the Songwe DFS and in anticipation of releasing the Integrated DFS, Mkango continues to advance ongoing discussions with potential strategic investors, development and commercial banks, and off-takers, working closely with its brokers, its project finance advisors, Terrafranca Capital Partners Ltd (www.terrafranca.co.uk), its United States strategic advisors, Jones Group International (www.jonesgroupinternational.com) and EIT RawMaterials (www.eitrawmaterials.eu) within the framework of the European Raw Materials Alliance.

During the week of 27th June 2022, the Company hosted site visits to Songwe for a number of major commercial and development banks.

Derek Linfield, Chairman of Mkango, stated: "*This is a major milestone which few rare earth companies have been able to reach. It reflects the perseverance and outstanding work completed by our executive and management team since Project inception in 2010, as well as by our excellent team of international consultants, advisors and academic partners, in addition to the longstanding support of our local stakeholders and the Government of Malawi. We look forward to developing this exciting Project for the benefit of Malawi and our shareholders.*"

William Dawes, Chief Executive of Mkango, stated: *"Songwe is the cornerstone of Mkango's Mine, Refine, Recycle strategy, underpinning development of the proposed Pulawy separation plant in Poland and complementing our interests in rare earth magnet recycling in the UK and Germany via HyProMag. The DFS is a major step forward for the Company, uniquely positioning Mkango as a future supplier of both mined and recycled rare earths for the green transition, against a backdrop of a very strong demand and pricing outlook."*

Alexander Lemon, President of Mkango, stated: *"Mkango is pleased to announce this major milestone for the Company, and looks forward to finalising the Mining Development Agreement with the Government of Malawi. This Project is transformational for Malawi, and Mkango welcomes the very strong support it is receiving from all stakeholders. Songwe will catalyse a new industrial revolution in Malawi, creating employment opportunities and producing high value-added exports, as well as further unlocking Malawi's mineral potential and new infrastructure developments*."

Summary of Selected Financial Inputs and Corresponding Results – Post-Tax Valuation

Item	Unit	Value
Life of operations post-tax nominal cash flow	US$ million	2,083.3

Payback period from project start[1]	Years	5.0
Payback period from start of full production[1]	Years	2.5
Post-tax NPV at 10% (nominal) discount rate	US$ million	559.0
Post-tax IRR (nominal)	%	31.5

1 Assumes project start ie start capital expenditure March 2023 and start of full production September 2025

Project Overview

Mkango appointed SENET, a DRA Global company, as the principal consultant to complete the DFS. SENET is a leading engineering, procurement and construction management (EPCM) minerals processing and project delivery firm located in Africa. Other primary consultants for the DFS included the following:

- Geology, Mineral Resource, and Geotechnical Investigation: The MSA Group (Pty) Ltd ("MSA")
- Mining: Bara Consulting (Pty) Ltd ("Bara")
- Comminution: Grinding Solutions Limited ("Grinding Solutions"), Keramos
- Process Plant including On-Site and Off-Site Infrastructure: SENET, a DRA Global Company ("SENET")
- Hydrometallurgy: Australian Nuclear Science and Technology Organisation ("ANSTO")
- Flotation: KYSPY Investments (Pty) Ltd ("KYSPYmet"), ALS Metallurgy (Pty) Ltd ("ALS Metallurgy")
- Tailings Storage Facility (TSF): Epoch Resources (Pty) Ltd ("Epoch")
- Environmental, Social and Health Impact Assessment (ESHIA): Digby Wells and Associates (Pty) Ltd ("Digby Wells Environmental"), Kongiwe Environmental (Pty) Ltd
- Geochemistry: SGS Australia (Pty) Ltd
- Geotechnical testwork: Western Geotechnical and Laboratory Services
- Logistics: C. Steinweg Bridge (Pty) Ltd

The DFS is based on a conventional open pit contract mining operation, feeding mills, flotation and hydrometallurgy plants on site in Malawi to produce a MREC, with an operating life (mining and processing) of 18 years with mining expected to commence in February 2025, processing expected to ramp up from July 2025 and full production expected from September 2025. The Company believes there is potential to increase the mine life given the additional Inferred Resource, the potential to expand the Mineral Resource, and the exploration potential from the nearby Nkalonje project. The DFS supports the declaration of a Proven and Probable Mineral Reserve Estimate of 18.1 million tonnes grading 1.16% TREO.

Energy supply for the Project comprises a 24 MW solar facility supplemented with grid power, which in Malawi is largely from hydroelectric sources. The Company is also evaluating wind power to further enhance and diversify the renewable power mix.

Songwe features broad zones of outcropping rare earth mineralisation on the northern slopes of a steep sided hill. The annual processing capacity is assumed to be approximately 1.0 million tonnes per year of ore with a view to producing an average of 5,954 tonnes of TREO in MREC per year for the first five years and 4,081 tonnes of TREO in MREC per year in years 6 to 18. The MREC will be cerium depleted. Because cerium is currently considered to have challenging market fundamentals, there is a strong economic rationale to remove as much cerium as possible and, as a result, a large proportion of the cerium will be removed from the MREC during the hydrometallurgical process. Confirmation of the flotation and hydrometallurgical processing flow sheets was underpinned by seven piloting campaigns at ALS Metallurgy and ANSTO.

The final stage of hydrometallurgical piloting at ANSTO produced MREC grading 55% TREO equivalent, enriched in neodymium and praseodymium ("Nd/Pr") oxides, which together made up 31% of the rare earth oxide content in the carbonate product (i.e. Nd/Pr oxides / TREO = 31%).

The MREC produced from Songwe is expected to be a high value product (averaging US$32,816 per tonne (real 2022 US dollars)) for the first full five years of production based on pricing estimates from Adamas Intelligence and will be exported via largely existing infrastructure. The Project is connected by road to Blantyre, the largest commercial centre in Malawi, located approximately 70 km away, which has a rail head and international airport.

There have been significant improvements to local infrastructure in recent months. The Malawi Roads Authority has upgraded an existing government road from nearby Migowi to the Songwe Hill project site. To date, 12 km of an existing 15 km government dirt track has been upgraded and widened to an all-weather gravelled road with new reinforced concrete culverts, embankments and bridges installed.

The MREC is expected to be shipped to the proposed Pulawy project in Poland for separation. The DFS is based on selling the MREC rather than separated products. As a result, a 27% discount was applied to the forecasted value of rare earths contained in the MREC (discount equivalent to approximately US$22.07 per kilogram (real 2022 US dollars) of TREO in MREC for first full five years of production to reflect the discount that would be applied for MREC product versus the value of the underlying separated rare earth oxides ("REO"). A significant proportion of this discount is expected to be captured in the Pulawy separation plant. It is envisaged that the Pulawy plant will sell separated neodymium, praseodymium and / or didymium (NdPr) oxides as well as a heavy rare earth enriched carbonate and a lanthanum cerium carbonate, thereby capturing more of the value of the underlying REOs. Subject to the results of the Pulawy feasibility study, Mkango is targeting a separation cost of less than US$3 per kilogram of TREO in MREC (based on the rare earth distribution below) to produce this product suite at Pulawy, with a capex for the separation plant targeted at approximately US$120 million.

A summary of the key outputs of the DFS is presented in the tables below:

Summary of Mining and Processing Inputs and Results – Average over First Full Five Years[1]

Item	Unit	Value
Mining		
Average yearly ore mined	kt	2,186
Average TREO grade mined	%	1.19
Average yearly waste mined	kt	3,667
Average strip ratio (waste:ore)		1.68
Processing		
Average yearly flotation plant feed	kt	1,000.8
Average plant feed TREO grade	%	1.50
Flotation TREO concentrate grade	%	15.05
Average TREO recovery to concentrate	%	74.10
Average yearly flotation concentrate feed to hydrometallurgical plant	kt	74.06
Average NdPr oxide hydrometallurgical recovery to carbonate	%	85.3
Average Ce oxide hydrometallurgical recovery to carbonate	%	20.9
Average yearly TREOs in carbonate product	t	5,954
Average carbonate TREO grade	%	55
Average yearly carbonate production (dry basis)	t	10,826

[1] First 5 years refers to the 60 months from start of processing in September 2025. Mining excludes first 5 months of mined and stockpiled ore prior to start of processing (819,437 tonnes at 1.00% TREO)

Summary of Mining and Processing Inputs and Results – Life of Operations (averages)

Item	Unit	Value
Life of operations (mining and processing)	Years	18
Mining (February 2025 – April 2037)		
Average yearly ore mined	kt	1,481
Average TREO grade mined	%	1.16
Average yearly waste mined	kt	3,311
Average strip ratio (waste:ore)		2.2
Processing (September 2025 – August 2043)[1]		
Average yearly flotation plant feed	kt	1,000.8
Average plant feed TREO grade	%	1.16
Flotation TREO concentrate grade	%	11.64
Average TREO recovery to concentrate	%	74.10
Average yearly flotation concentrate feed to hydrometallurgical plant	kt	74.06
Average NdPr oxide hydrometallurgical recovery to carbonate	%	85.3
Average Ce oxide hydrometallurgical recovery to carbonate	%	20.9
Average yearly TREOs in carbonate product	t	4,634
Average carbonate TREO grade	%	55.00
Average yearly carbonate production (dry basis)	t	8,425

[1] Excludes final month of partial operations

Summary of Mining and Processing Inputs and Results – Life of Operations (totals)

Item	Unit	Value
Mining		
Total ore mined	kt	18,147.8
Total waste mined	kt	40,553.9
Strip ratio (waste: ore)		2.2
Processing		
Total flotation concentrate feed to hydrometallurgical plant	kt	1,341.4
Total contained TREO in carbonate product	kt	83.4
Total carbonate production (dry basis)	t	151,644

Market and Financial Analysis

A detailed financial model was constructed based on input parameters set out in the DFS. Free cash flows were modelled in both real and nominal terms for a range of discount rates and on a debt free basis.

MREC price forecasts and underlying REO price forecasts were based on the following market analysis by Adamas Intelligence from their report dated April 2022 entitled Rare Earth Magnet Market Outlook to 2035:

- From 2022 through 2035:
    - Global demand for NdFeB magnets is expected to increase at a compound annual growth rate ("CAGR") of 8.6 %, bolstered by double-digit growth from the electric vehicle and wind power

sectors, translating into comparable demand growth for the rare earth elements ("REEs") (i.e., neodymium, praseodymium, dysprosium and terbium) that these magnets contain.
    - Global production of neodymium, praseodymium, dysprosium and terbium are forecast to collectively increase at a slower CAGR of 5.4 % as the supply side of the market increasingly struggles to keep up with rapidly growing demand.

- From 2023 through 2035, the global rare earth industry is expected to consistently underproduce neodymium, praseodymium, dysprosium and terbium oxides (or oxide equivalents), resulting in the depletion of historically accumulated inventories and, ultimately, shortages of these critical magnet materials if supply is not increased beyond the levels currently anticipated.

Songwe offers strong economic exposure to the rare earth permanent magnet sector, which is the fastest-growing end-use category for rare earths and the one most in need of additional rare earth supplies. From a marketing, logistics and economic standpoint, the high proportion of valuable magnet-related REEs in the Songwe Hill project's prospective TREO production means that a future mine (with separation) could generate approximately 95% of its rare earth revenues from just 34% of its production volume.

Going forward, Adamas Intelligence believes that the current strong pricing environment for rare earth materials is here to stay, notwithstanding the market's usual ebbs and flows on the back of seasonality and other transient factors.

Adamas Intelligence forecasts the following for the basket value (real 2022 US dollars) of Songwe Hill's TREO production:

- Base case: US$64.81/kg in 2022 increasing to US$102.77/kg in 2035
- Upside scenario: US$70.59/kg in 2022 increasing to US$114.59/kg in 2035
- Downside scenario: US$59.02/kg in 2022 increasing to US$91.07/kg in 2035

Adamas Intelligence forecasts the following for the value of MREC (real 2022 US dollars) produced at the Songwe Hill project based on a MREC grade of 55% and applying a 27% discount to the forecast MREC value (discount equivalent to US$17.50 per kilogram of TREO in MREC in 2022 and US$27.75 per kilogram of TREO in MREC in 2035) to reflect the estimated discount that would be applied for MREC product versus the value of the underlying separated rare earth oxides ("REO"):

- Base case: US$26.02/kg in 2022 increasing to US$41.26/kg in 2035
- Upside scenario: US$28.34/kg in 2022 increasing to US$46.01/kg in 2035
- Downside scenario: US$23.70/kg in 2022 increasing to US$36.57/kg in 2035.

The Adamas Intelligence base case scenario was applied in the DFS which is an equivalent to a total rare earth basket value in real 2022 US Dollars for Songwe of US$64.81/kg of TREO in 2022, increasing to US$83.62/kg in 2025 and US$102.77/kg in 2035.

The key revenue drivers for Songwe are neodymium and praseodymium. The base case basket value and MREC price forecasts reflect underlying neodymium oxide (Nd oxide) and praseodymium oxide (Pr oxide) price forecasts of US$165.0/kg and US$156.8/kg in 2022 increasing to US$215.5/kg and US$204.7/kg in 2025 and US$266.0/kg and US$252.7/kg in 2035.

From a marketing, logistics and economic standpoint, the high proportion of valuable magnet-related REEs in the Project's expected TREO production means that Songwe (with separation at Pulawy) could generate approximately 95% of its rare earth revenues from just 34% of its production volume.

The relative contributions of the REOs to the production split and basket value, based on the first full five years of production, are illustrated below:

Rare earth oxide		**REO Price Assumption**	**REO in MREC**	**REO in MREC**	**REO in MREC**	**REO in MREC**

		US$/kg	tonnes per years	% Split (tonnes)	(US$/kg)	% split (value)
Lanthanum	La2O3	1.40	2,326	39.07%	0.55	0.7%
Cerium	CeO2	1.45	1,094	18.38%	0.27	0.3%
Praseodymium	Pr6O11	199.82	458	7.70%	15.38	18.8%
Neodymium	Nd2O3	210.33	1,495	25.10%	52.80	64.6%
Samarium	Sm2O3	5.09	197	3.31%	0.17	0.2%
Europium	Eu2O3	36.37	51	0.85%	0.31	0.4%
Gadolinium	Gd2O3	108.41	110	1.86%	2.01	2.5%
Terbium	Tb4O7	2482.94	12	0.20%	5.01	6.1%
Dysprosium	Dy2O3	584.22	44	0.74%	4.30	5.3%
Yttrium	Y2O3	16.90	143	2.40%	0.41	0.5%
Holmium	Ho2O3	286.84	6	0.10%	0.27	0.3%
Erbium	Er2O3	62.92	10	0.17%	0.11	0.1%
Thulium	Tm2O3	200.00	1	0.02%	0.04	0.0%
Ytterbium	Yb2O3	19.59	6	0.10%	0.02	0.0%
Lutetium	Lu2O3	949.83	1	0.01%	0.10	0.1%
			Average REO in MREC: 5,954 tonnes	**Total: 100%** **Nd/Pr/Dy/Tb oxides: 34%**	**Average basket value: US$81.73/kg**	**Total: 100%** **Nd/Pr/Dy/Tb oxides: 95%**

Based on the preceding assumptions, the discounted cash flow valuation analysis for the base case provided the following results:

- NPV at 10% (nominal) (7.3% real) of US$559.0 million as at 1 July 2022
- IRR of 31.5% (nominal) (28.3% real)

NPVs of Songwe Hill Project[1]

Financial Evaluation	Nominal Discount Rate (%)	Real Discount Rate (%)	Adamas Intelligence Base Case Post-tax NPV (US$million)	Adamas Intelligence Upside Case Post-tax NPV (US$million)	Adamas Intelligence Downside Case Post-tax NPV (US$million)
	8.0	5.37	719.3	1,007.2	431.6
Base Case	**10.0**	7.32	559.0	801.4	316.5
	12.0	9.27	435.0	641.1	228.5
Nominal Internal Rate of Return			31.47%	39.20%	22.70%
Real Internal Rate of Return			28.26%	35.80%	19.71%

[1] As at July 1, 2022

Operating Costs

Cash operating costs include the costs of contract mining, milling, flotation, leaching, purification and precipitation to produce a MREC in addition to other costs associated with the operation. The operating costs do not include the cost of separation, which is reflected in the 27% discount applied to the basket value of the REOs in MREC. The estimate of opex, and the associated general and administration ("G&A") costs, were calculated to an accuracy of +15% to −10% and were utilised in the economic analysis of the Project.

Reagents and consumables account for 56% of estimated opex, with power accounting for an additional 18%. Operating costs have been negatively impacted by the increased costs of reagents and the freight costs of shipping these reagents and these costs may reduce within the timeline for Songwe development as reagent supply chains and shipping costs return to more normal market conditions. This will be investigated further in parallel with front end engineering and design ("FEED") for Songwe.

In addition, the Company and SENET, together with the Company's other consultants, have identified a number of other areas with potential for optimisation, which will focus on reducing reagent and power consumption.

Operating Costs – Average over First Full Five Years

Item	Unit	Value
Mining	US$/kg TREO	4.8
Beneficiation – Milling and Flotation	US$/kg TREO	7.9
Hydrometallurgical Plant	US$/kg TREO	10.8
G&A and Other	US$/kg TREO	1.8
Total Operating Costs	**US$/kg TREO**	**25.3**

Operating Costs – Average over Life of Operations

Item	Unit	Value
Mining	US$/kg TREO	3.9
Beneficiation – Milling and Flotation	US$/kg TREO	10.2
Hydrometallurgical Plant	US$/kg TREO	13.8
G&A and Other	US$/kg TREO	2.2
Total Operating Costs	**US$/kg TREO**	**30.1**

Capital Expenditure

The estimate of initial capital expenditure costs was calculated to an accuracy of +15% to −10% and was utilised in the economic analysis of the Project. The capital costs were priced as of Q3 and Q4 of 2021. These costs were increased by 7.5% to account for the increase in prices between last year and the date of the DFS as, due to anomalous market conditions, the increase was higher than expected. Capex estimates were reviewed by Professional Cost Consultants (PCC), which confirmed the estimates were realistic.

The largest capex component is an integrated processing plant comprising a mill, flotation plant, hydrometallurgical plant, and a sulphuric acid plant with power co-generation capacity. The capex estimate for the integrated processing plant was completed by SENET and covers the design, engineering, procurement, supply/manufacture, construction and pre-commissioning of the proposed new processing facility and

associated plant complex infrastructure including a 24.3MW solar facility. Other major capex items include the cost of a lined tailings storage facility provided by Epoch.

Total initial capital expenditure is US$277.4 million, not including a contingency of US$33.8 million.

Capital Cost Summary

Item	Unit	Value
Total Development Capital	US$ million	277.4
Contingency	US$ million	33.8
Total Development Capital Including Contingency	**US$ million**	**311.2**
Sustaining capital and reclamation	US$ million	77.6
Total Capital Expenditure	**US$ million**	**388.8**

Capital Cost Breakdown

Description	CAPEX	Contingency	Total CAPEX
	US$	US$	US$
General & Plantwide	124,924,955	17,288,526	142,213,481
Comminution/flotation	28,223,755	2,856,945	31,080,700
Hydromet	27,206,985	2,775,705	29,982,690
Spares	4,896,744	734,512	5,631,256
Mobile Plant & Equipment	4,087,295	613,094	4,700,389
Generator Plant	5,469,482	820,422	6,289,904
PV Solar Plant	21,327,663	3,031,646	24,359,308
Construction Camp	3,567,379	535,107	4,102,486
TSF Phase 1 and RWD	31,225,050	2,420,546	33,645,596
Mining Pre-Production	13,972,675	2,095,901	16,068,576
Other	12,460,340	623,017	13,083,357
TOTAL INITIAL COST	**277,362,322**	**33,795,421**	**311,157,744**

Capital Cost Breakdown

Description	CAPEX (US$)	Contingency (US$)	Total CAPEX (US$)
Earthworks	7,470,560	1,120,584	8,591,144
Civil Works – Plant	17,336,477	2,600,471	19,936,948
Civil Works – Infrastructure	1,717,576	257,636	1,975,212
Infrastructure	2,993,326	299,333	3,292,658
Structural Steel	6,239,267	748,712	6,987,979
Plate Work	2,699,408	323,929	3,023,337
Tankage	4,509,659	541,159	5,050,818
Machinery and Equipment	51,550,103	5,155,010	56,705,113
Piping	5,776,188	866,428	6,642,616
Valves	1,763,011	264,452	2,027,463
Electricals	10,505,600	1,050,560	11,556,160

Instrumentation	5,178,489	776,773	5,955,263
Transport	4,389,373	658,406	5,047,778
E&I Installation	6,715,672	1,007,351	7,723,023
SMPP Installation	21,862,300	3,279,345	25,141,645
TOTAL DIRECT FIELD COSTS	**150,707,010**	**18,950,150**	**169,657,160**
Commissioning Spares	243,050	36,458	279,508
2-Year Operational Spares	2,633,275	394,991	3,028,266
Insurance and Critical Spares	2,020,419	303,063	2,323,482
Vendor Services	2,596,685	389,503	2,986,188
First Fills	558,554	83,783	642,337
TOTAL INDIRECT FIELD COSTS	**8,051,983**	**1,207,798**	**9,259,781**
TOTAL FIELD COST	**158,758,993**	**20,157,947**	**178,916,941**
Project Management (EPCM)	23,318,266	3,497,740	26,816,006
Insurances and Guarantees	3,175,180	0	3,175,180
TOTAL HOME OFFICE COSTS	**26,493,446**	**3,497,740**	**29,991,186**
TOTAL PROJECT COST	**185,252,439**	**23,655,687**	**208,908,127**
Mobile Plant and Equipment	4,087,295	613,094	4,700,389
Generator Plant	5,469,482	820,422	6,289,904
PV Solar Plant	21,327,663	3,031,646	24,359,308
Construction Camp	3,567,379	535,107	4,102,486
TSF Phase 1 and RWD	31,225,050	2,420,546	33,645,596
Mining Pre-Production	13,972,675	2,095,901	16,068,576
Other	12,460,340	623,017	13,083,357
TOTAL OTHER COST	**92,109,883**	**10,139,734**	**102,249,617**
TOTAL INITIAL COST	**277,362,322**	**33,795,421**	**311,157,744**
TSF Sustaining Capital – Phases 2 to 5	49,551,380	3,841,192	53,392,572
Mining Sustaining Capital	896,618	134,493	1,031,111
Closure Cost	15,616,797	961,460	16,578,257
Owners Cost	6,028,280	602,828	6,631,108
TOTAL SUSTAINING COST	**72,093,075**	**5,539,973**	**77,633,048**
TOTAL COST	**349,455,397**	**39,335,394**	**388,790,792**

Mineral Resource and Mineral Reserve Estimates

The DFS is based on the NI 43-101 Mineral Resource Estimate prepared by MSA entitled "NI 43-101 Technical Report – January 23, 2019 Mineral Resource Estimate" which was filed on SEDAR on February 3, 2020. The Mineral Resources are reported within a conceptual pitshell at a selected cut-off, taking into consideration processing and mining assumptions, as part of an assessment of reasonable prospects for eventual economic

extraction ("RPEEE"). The Mineral Resource Estimates for Songwe Hill are reported at a cut-off grade of 1.0% TREO and classified into the Measured, Indicated and Inferred categories as summarised below.

Category	Tonnage (Mt)	TREO %	TREO ('000 Tonnes)
Measured	8.81	1.50	131.9
Indicated	12.22	1.35	165.5
Measured & Indicated	**21.03**	**1.41**	**297.4**
Inferred	27.54	1.33	366.2

Note: TREO = *La2O3, CeO2, Pr6O11, Nd2O3, Sm2O3, Eu2O3, Gd2O3, Tb4O7, Dy2O3, Ho2O3, Er2O3, Tm2O3, Yb2O3, Lu2O3,* and Y_2O_3 *In situ – no geological losses applied*

The sensitivity of the Mineral Resource at a variety of cut-off grades for the combined Measured and Indicated categories is presented in the following table.

Cut-off TREO %	Tonnage (Mt)		TREO %	TREO ('000 Tonnes)
0.50	37.64		1.13	425.7
0.75	30.45		1.25	379.9
1.00	**21.03**		**1.41**	**297.4**
1.25	12.44		1.62	201.2
1.50	6.80		1.83	124.1
2.00	1.12		2.35	26.32

The Inferred Mineral Resources are presented at a variety of cut-off grades in the table below.

Cut-off TREO %	Tonnage (Mt)	TREO %	TREO ('000 Tonnes)
0.50	59.65	1.02	608.2
0.75	43.74	1.16	507.1
1.00	**27.54**	**1.33**	**366.2**
1.25	14.35	1.52	218.4
1.50	5.92	1.75	103.4
2.00	0.92	2.21	20.3

The DFS supports the declaration of a Mineral Reserve Estimate for the Project. The results of the DFS have shown that the mining inventory included in the study, which is derived from only Measured and Indicated Mineral Resources, can be viably mined based on the techno-economic assumptions in the DFS. Mineral Reserves resulting from Measured Mineral Resources have been considered as Proven Mineral Reserves while those generated from Indicated Mineral Resources are categorised as Probable Mineral Reserves. The table below shows a summary of the total Mineral Reserves.

Mineral Reserve Estimate

Category	Tonnage (Mt)	TREO %	TREO (t)

Proven Mineral Reserves	8.160	1.28	104,183
Probable Mineral Reserves	9.988	1.07	106,801
Total Ore Reserves	**18.147**	**1.16**	**210,984**
NOTE: Totals might not add due to rounding.			

NOTES:

1. Ore has been classified as Type 1 ore and Type 2 material. The Mineral Reserve Estimate only includes Type 1 ore categorised on the basis of metallurgical performance. Type 2 material, which is mineralised material with a grade above the cut-off grade but not optimised for metallurgical processing, will be stockpiled on site for possible future processing. This material is excluded from both the run of mine (ROM) ore inventory and any Mineral Reserve estimate.
2. Inferred Resources are not considered as ore in the mine plan and as such are treated as waste and not included in the ROM ore inventory.

   The following modifying factors were used to convert the Mineral Resource Estimate to the Mineral Reserve Estimate: Mining recovery – 95%; mining dilution – 9%; TREO recovery – 39.6%; product price – US$68.2/kg TREO; operating cost – US$30.2/kg TREO recovered.
3. The financial valuation is based on the mining of the ROM Type 1 ore (high grade and medium grade).

Mining Summary

The mine design was completed by Bara and assumed the use of a contract miner. The mine plan incorporates the use of stockpiles to manage the grade profile and maximise returns. As part of the DFS, contract mining companies were integrally involved in the estimation process.

The mining method at Songwe will be conventional open-pit mining, making use of relatively small-scale trucks and diesel-hydraulic excavators, selected to match the mining conditions and required production rates. The procedure followed in arriving at the mine design was as follows:

- A geotechnical evaluation was completed including logging of core on site. The geotechnical data was collated in a database and used to inform a geotechnical design of the pit slope design parameters.
- Using the slope design parameters, mining costs obtained from mining contractors, modifying factors derived during the pre-feasibility mining study, and product price data provided by Mkango from Adamas Intelligence, a pit optimisation was completed. The results of the pit optimisation were analysed, and a pit shell was selected on which to base the DFS pit design.
- Various scenarios of production rate, cut-off grade application, and stockpiling strategy were tested during the pit optimisation, which ultimately led to the selection of an option developed in more detail for the DFS pit design.
- Mine design criteria were developed for the pit design. A practical pit design was completed which included the design of haul roads and safety berms. The overall pit was split into two phases or cutbacks.
- A production schedule was developed, addressing all the material types produced from the pit over the life of mine (LOM). These material types included waste, Type 1 ore (included in Mineral Reserves Estimate, mine plan and financial forecasts) and Type 2 material (stockpiled and not included in Mineral Reserves Estimate, mine plan and financial forecasts).

Processing and Metallurgical Summary

Test work started on the Songwe Hill project in 2010 and has since included comprehensive test work over several campaigns, ensuring that the orebody and optimal processing routes are well understood. Surface grab

samples, drill core samples from drilling campaigns and bulk samples have been collected in the decade since 2010 and were used to determine the optimal beneficiation and recovery processes for the Songwe ore. Mineralogical analyses indicates that synchysite is the main rare earth bearing mineral. The understanding of the ore has been of fundamental importance in developing flowsheets for the beneficiation and recovery of rare earths.

The development of the processing flow sheet is underpinned by mineralogy, comminution, flotation and hydrometallurgical test work undertaken at laboratories in Australia (KYSPYmet, ALS Metallurgy, ANSTO, Keramos, SGS, Bureau Veritas, Nagrom), South Africa (Mintek), Canada (SGS, XPS) and the United Kingdom (Grinding Solutions, Camborne School of Mines, Natural History Museum, Aberystwyth University) as well as three PhD research projects undertaken at Camborne School of Mines. Not only has this international effort delivered a processing flow sheet for Songwe, but it has led to a greater understanding of the mineralogy, geo-metallurgy and beneficiation processes for primary carbonatite hosted rare earth deposits.

Numerous bench-scale flotation tests were completed at KYSPYmet to develop the flotation regime for the DFS. This culminated in flotation piloting carried out at ALS Metallurgy which was completed over a seven-day period. The first three days were operated on a day shift only, with results collected during the day's shift to be analysed and assessed overnight in order to optimize conditions and make any adjustments for the next day of operation. The pilot plant was operated continuously for the last four days with relatively stable conditions.

Several different sets of data were collected during flotation piloting, which were used for the assessment of concentrate grade and recovery:

- Control Samples: Grab samples typically taken every three to four hours during the trial on major streams. These results were used to control the circuit and make necessary changes to optimise the circuit performance.
- Shift Composites: Multiple samples taken of major streams composited together over each nominal 12-hour shift.
- Surveys: Multiple samples taken of every stream in the plant over a one-to-two-hour period of stable operation. This data typically represents optimised results and allows a full circuit mass balance to be conducted.
- Timed final concentrate: The final concentrate was collected into 200 litre drums at timed intervals, nominally every three hours, and separated, filtered, sampled and assayed. This enables a recovery to be calculated by dividing the concentrate REO units by the feed REO units over the same time period.

ANSTO has conducted test work on Songwe flotation concentrate since mid-2019 in order to develop the hydrometallurgical flow sheet for the DFS. Numerous tests were completed over a two-year span, optimising conditions for each unit operation in the hydrometallurgical plant. Bench-scale test work was conducted to establish the optimal process parameters, focusing on the optimal extraction of rare earths and effective rejection of impurities that might impact rare earth recovery. After the bench-scale test work, step-through tests were conducted on consecutive processing operations using material from the previous test in the next, which further refined the conditions and target reagent consumptions, rare earth extractions, and impurity levels. Following the step-through tests, the pilot plant design criteria were generated to upscale the process to continuous piloting. In many cases, bench-scale test work, step-through test work and piloting overlapped, as various unit operations were tested in parallel. Six campaigns of hydrometallurgical piloting were completed resulting in a hydrometallurgical flow sheet comprising the following steps:

- Gangue leach (hydrochloric acid) and acid regeneration using sulphuric acid
- Caustic conversion of gangue leach residue and cerium oxidation to reject cerium
- Caustic evaporation and regeneration

- Rare earth leach of caustic conversion residue
- Purification and rare earth carbonate precipitation

As noted above, the final stage of hydrometallurgical piloting at ANSTO produced MREC grading 55% TREO equivalent, enriched in neodymium and praseodymium (Nd/Pr) oxides, which together made up 31% of the rare earth oxide content in the carbonate product (i.e., Nd/Pr oxides / TREO = 31%).

Environmental, Social and Health Impact Studies

Digby Wells Environmental undertook the ESHIA process and Kongiwe Environmental (Pty) Ltd provided further input throughout. The ESHIA was undertaken in terms of the Malawian Environmental Management Act, No. 19 of 2017 (the EMA Act) promulgated in 2019 and in accordance with the International Finance Corporation (IFC) Performance Standards (PS) and the GISTM (2020). During the ESHIA process, Digby Wells worked with local Malawian experts, EnviroConsult, which ensured that there was a two-way knowledge transfer during the ESHIA in terms of international good practice and local expertise and compliance. The ESHIA is a culmination of over nine years of baseline studies and is currently being submitted to the Malawi Environmental Protection Authority (MEPA) for review and approval.

Extensive stakeholder engagement has been undertaken in line with IFC requirements with local communities and the Malawi government. This, in conjunction with extensive corporate social responsibility projects throughout the exploration stage, has resulted in a project enabling environment. Mkango's strategy of "Mine, Refine and Recycle" is aligned to our Environmental, Social, and Governance (ESG) goals which include providing maximum shareholder value while implementing sincere, meaningful and successful social responsibility programmes. The Project is expected to contribute to the development of Malawi by providing the country with an exportable product which is reliable, sought after and profitable, all while ensuring that minimal negative impacts occur to their surrounding environment and social fabric.

Qualified Persons

An NI 43-101 Technical Report supporting the DFS is being prepared by SENET under the guidance of Mr. Nick Dempers, who is a "Qualified Person" in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects. Although the Qualified Person was not responsible for the completion of the Geology, Mineral Resource, Reserve, TSF and ESHIA sections of the DFS, the Qualified Person at SENET has relied on the Qualified Persons listed below who are the specialists in these fields for completion of their respective portions of the DFS. The Qualified Person at SENET has reviewed the sections completed by others and has found no reason not to accept their work.

Scientific and technical information contained in this release relating to the Geology and Mineral Resource Estimate has been approved and verified by Mr. Jeremy Witley Pr. Sci Nat of The MSA Group Pty Ltd, who is a "Qualified Person" in accordance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects.

Scientific and technical information contained in this release relating to sampling, analytical, and test data underlying the Mineral Resource Estimate has been approved and verified by Dr. Scott Swinden PGeo of Swinden Geoscience Consultants Ltd who is a "Qualified Person" in accordance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects.

The Mineral Reserve calculation was completed by Bara under the supervision of Mr. Clive Brown, who is a "Qualified Person" in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

The tailings storage facility (TSF) study was completed by Epoch Resources under the supervision of Mr. Guy Wiid, who is a "Qualified Person" in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

The ESHIA study was completed by Digby Wells under the supervision of Mr. Graham Trusler, who is a “Qualified Person” in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

The process design and cost estimation as well as the design and cost estimation for the infrastructure associated with the integrated processing plant for the Study was completed by SENET under the supervision of Mr. Nick Dempers who is a “Qualified Person” in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

Scientific and technical information contained in this release in relation to metallurgical test work has been approved and verified by Mr. Nick Dempers, who is a “Qualified Person” in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects.

The NI 43-101 compliant Technical Report in respect of the results of the Study described herein will be filed on SEDAR within the next 45 days.

Independence of Qualified Persons

All of the Qualified Persons referred to in this Press Release are independent of Mkango.

Market Abuse Regulation (MAR) Disclosure

The information contained within this announcement is deemed by the Company to constitute inside information as stipulated under the Market Abuse Regulations (EU) No. 596/2014 ('MAR') which has been incorporated into UK law by the European Union (Withdrawal) Act 2018. Upon the publication of this announcement via Regulatory Information Service, this inside information is now considered to be in the public domain.

About Mkango Resources Limited

Mkango's corporate strategy is to develop new sustainable primary and secondary sources of neodymium, praseodymium, dysprosium and terbium to supply accelerating demand from electric vehicles, wind turbines and other clean technologies. This integrated Mine, Refine, Recycle strategy differentiates Mkango from its peers, uniquely positioning the Company in the rare earths sector.

Mkango is developing the Songwe Hill rare earths project in Malawi. Malawi is known as "The Warm Heart of Africa", a stable democracy with existing road, rail and power infrastructure, and new infrastructure developments underway.

In parallel, Mkango and Grupa Azoty PULAWY, Poland's leading chemical company and the second largest manufacturer of nitrogen and compound fertilizers in the European Union, have agreed to work together towards development of a rare earth Separation Plant at Pulawy in Poland (the “Pulawy Separation Plant”). The Pulawy Separation Plant will process the purified mixed rare earth carbonate produced at Songwe Hill.

Through its ownership of Maginito (www.maginito.com), Mkango is also developing green technology opportunities in the rare earths supply chain, encompassing neodymium (NdFeB) magnet recycling as well as innovative rare earth alloy, magnet, and separation technologies. Maginito holds a 42% interest in UK rare earth (NdFeB) magnet recycler, HyProMag (www.hypromag.com), with an option to increase its interest to 49%. Mkango holds 100% of rare earth recycler Mkango Rare Earths UK Limited.

Mkango also has an extensive exploration portfolio in Malawi, including the Mchinji rutile exploration project, the Thambani uranium-tantalum-niobium-zircon project and Chimimbe nickel-cobalt project.

For more information, please visit www.mkango.ca

Cautionary Note Regarding Forward-Looking Statements

This news release contains forward-looking statements (within the meaning of that term under applicable securities laws) with respect to Mkango, its business, HyProMag, Mkango Rare Earths UK Limited, the Pulawy

Separation Plant, and Songwe and respective feasibility studies. Generally, forward looking statements can be identified by the use of words such as “plans”, “expects” or “is expected to”, “scheduled”, “estimates” “intends”, “anticipates”, “believes”, or variations of such words and phrases, or statements that certain actions, events or results “can”, “may”, “could”, “would”, “should”, “might” or “will”, occur or be achieved, or the negative connotations thereof. Readers are cautioned not to place undue reliance on forward-looking statements, as there can be no assurance that the plans, intentions or expectations upon which they are based will occur. By their nature, forward-looking statements involve numerous assumptions, known and unknown risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections and other forward-looking statements will not occur, which may cause actual performance and results in future periods to differ materially from any estimates or projections of future performance or results expressed or implied by such forward-looking statements. Such factors and risks include, without limiting the foregoing, governmental action relating to COVID-19, the fact that actual results may differ significantly from those projected in the DFS, resource and reserve calculations result in estimates only, market effects on global demand and pricing for the metals and associated downstream products for which Mkango is exploring, researching and developing, factors relating to the development of Songwe and the Pulawy Separation Plant including the inexact nature of capex and opex estimates and management’s ability to reduce these estimates in the current environment, the outcome and timing of the completion of the Integrated DFS, cost overruns, complexities in building and operating Songwe and the Pulawy Separation Plant, changes in economics and government regulation, the positive results of a feasibility study on the Pulawy Separation Plant and delays in obtaining financing or governmental approvals for, and the impact of environmental and other regulations relating to, Songwe and the Pulawy Separation Plant. The forward-looking statements contained in this news release are made as of the date of this news release. Except as required by law, the Company disclaims any intention and assume no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law. Additionally, the Company undertakes no obligation to comment on the expectations of, or statements made by, third parties in respect of the matters discussed above.

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